

WHAT IS CLAIMED:

1. A pressurized screen for screening a fibrous suspension comprising:
an intake chamber having an intake structured and arranged to guide the fibrous suspension into said intake chamber;
at least one wire element with a plurality of wire openings, said at least one wire element being structured and arranged to pass at least a portion of the fibrous suspension in said intake chamber and to reject at least a portion of the fibrous suspension in said intake chamber;
a centrifuge rotor with apertures positioned in said intake chamber, said centrifugal rotor being structured and arranged so that at least a part the fibrous suspension in said intake chamber travels radially inwardly through said apertures and into said at least one wire element; and
a heavy material outlet arranged to remove at least a part of the fibrous suspension not traveling through said apertures.
2. The pressurized screen in accordance with claim 1, wherein said portion of the fibrous suspension passing said at least one wire element is based on dimensions of fibrous material particles with the fibrous suspension.
3. The pressurized screen in accordance with claim 2, wherein said fibrous material particles comprise fibers.
4. The pressurized screen in accordance with claim 1, wherein said centrifugal rotor comprises a driven centrifuge rotor.
5. The pressurized screen in accordance with claim 1, wherein said apertures comprise slots having a longitudinal extent oriented one of at a right angle to or obliquely to a circumferential motion direction of said centrifuge rotor.
6. The pressurized screen in accordance with claim 5, wherein a maximum opening width of said apertures, viewed in said circumferential direction, is at least 5 mm.

7. The pressurized screen in accordance with claim 6, wherein said maximum opening width of said apertures, viewed in said circumferential direction, is at least 20 mm.

8. The pressurized screen in accordance with claim 1, wherein said centrifuge rotor comprises a cylindrical part in which said apertures are located.

9. The pressurized screen in accordance with claim 1, wherein said intake is arranged to be axially displaced from said apertures.

10. The pressurized screen in accordance with claim 1, further comprising a housing containing said pressurized screen,
wherein said intake is tangentially coupled to said housing.

11. The pressurized screen in accordance with claim 1, further comprising a housing containing said pressurized screen,
wherein said intake is centrally located in said housing.

12. The pressurized screen in accordance with claim 1, wherein said slots are continuous in the axial direction.

13. The pressurized screen in accordance with claim 1, wherein a total surface of all said apertures is at least 40% of a surface that the centrifuge rotor includes in an area of said apertures.

14. The pressurized screen in accordance with claim 1, further comprising stator elements arranged so that a shortest distance from said centrifuge rotor to said stator elements is between 1 and 10 mm.

15. The pressurized screen in accordance with claim 14, wherein said stator elements are arranged downstream of said apertures in a flow direction of said fibrous suspension.

16. The pressurized screen in accordance with claim 1, wherein said wire element is in the shape of a cylinder.

17. The pressurized screen in accordance with claim 1, wherein an axial extent of said apertures is between 5% and 25% of an axial extent of said at least one wire element.

18. A pressurized screen for screening a fibrous suspension comprising:
an intake chamber having an intake structured and arranged to guide the fibrous suspension into said intake chamber;

at least one wire element with a plurality of wire openings, said at least one wire element being structured and arranged to pass at least a portion of the fibrous suspension in said intake chamber and to reject at least a portion of the fibrous suspension in said intake chamber;

a centrifuge rotor with apertures positioned in said intake chamber, said centrifugal rotor being structured as a disk oriented at right angles to an axis of rotation and arranged to form a ring-shaped gap through which at least a part the fibrous suspension in said intake chamber travels radially inwardly and into said at least one wire element; and

a heavy material outlet arranged to remove at least a part of the fibrous suspension not traveling through said apertures.

19. The pressurized screen in accordance with claim 18, wherein said portion of the fibrous suspension passing said at least one wire element is based on dimensions of fibrous material particles with the fibrous suspension.

20. The pressurized screen in accordance with claim 19, wherein said fibrous material particles comprise fibers.

21. The pressurized screen in accordance with claim 18, wherein said centrifugal rotor comprises a driven centrifuge rotor.

22. The pressurized screen in accordance with claim 18, wherein said ring-shaped gap has an axial width of at most 100 mm.

23. The pressurized screen in accordance with claim 18, wherein said axial width of said ring-shaped gap is at most 10 mm.

24. The pressurized screen in accordance with claim 18, wherein said disk is closed.

25. The pressurized screen in accordance with claim 18, further comprising a drivable wire scraper structured and arranged to keep said at least one wire element clear.

26. The pressurized screen in accordance with claim 25, wherein said drivable wire scraper and said centrifuge rotor are connected to a same rotor.

27. The pressurized screen in accordance with claim 1, wherein an outside diameter of said centrifuge rotor is at least a same size of an outside diameter of said at least one wire element.

28. The pressurized screen in accordance with claim 27, wherein said outside diameter of said centrifugal rotor is at least 1.2 times the size of said outside diameter of said at least one wire element.

29. The pressurized screen in accordance with claim 18, further comprising radially extending centrifuge ribs coupled to said centrifuge rotor.

30. The pressurized screen in accordance with claim 29, wherein an outside diameter of said centrifuge rotor comprises toothed blades.

31. A pressurized screen for screening a fibrous suspension comprising:
an intake chamber structured and arranged to receive the fibrous suspension;

at least one wire element with a plurality of wire openings, said at least one wire element being structured and arranged to pass at least a portion of the fibrous suspension in said intake chamber and to reject at least a portion of the fibrous suspension in said intake chamber;

a centrifuge rotor with apertures positioned in said intake chamber, said centrifugal rotor being structured and arranged to pass the portions of the fibrous suspension to be passed and rejected by said at least one wire element and to reject the remainder of the fibrous suspension in said intake chamber; and

a reject outlet to receive the remainder of the fibrous suspension in said intake chamber.

32. The pressurized screen in accordance with claim 31, further comprising a drivable wire scraper structured and arranged to keep said at least one wire element clear.

33. The pressurized screen in accordance with claim 32, wherein said drivable wire scraper and said centrifuge rotor are connected to a same rotor drive.